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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,390	09/27/2001	Lei Zhang	GENE1400-2	7376

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EXAMINER

BOCKELMAN, MARK

ART UNIT

PAPER NUMBER

3762

DATE MAILED: 10/23/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/966,390

Applicant(s)

ZHANG ET AL.

Examiner

Mark W Bockelman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-80 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-80 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 April 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

1. Claims 28-56 and 66 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 28 and its dependent claims are incomplete in that the preamble recites and a method for electroporation - enhanced delivery but the body of the claim does not recites any steps where the tissue is electroporated. Applicant recites a pulse, but does not specify that the tissue undergoes poration as a result of the pulse.

Claim 66 has a lack of antecedent basis for "said electrode mounting bracket".

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-4, 7, 8, 20, 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Ariura et al. 4,474,570.

Ariura et al teaches the delivery of Vitamin C and derivatives thereof such as sodium ascorbate in a 10% aqueous solution to epidermal tissue for curing skin disorders. The production

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of collagen as well as the reduction of the level of free oxygen are inherent results of the administration of vitamin C to the epidermal layer. Applicant calls for the application of at least one electric pulse. Ariura supplies a single pulse of about 1-2 hours.

4. Claims 57, 59- 64, 67-68, 72-74 are rejected under 35 U.S.C. 102(b) as being anticipated by Hofmann USPN 5,464,386.

Hofmann shows a support member 10, feed tube 32 injection means, conductor 30 as part of the support structure, round /tube shaped mounting bracket 28 and meander - fingerlike electrode structure as seen in porous reservoir 20 on detachable electrode 22. In regard to claim 61, the electrode cover is still considered optional as specified in claim 57 and therefore is given no patentable weight. In regard to claim 72, obviously a portion, namely the conductors contained in the support member 10 connecting wire 30 to pins 28 serve to form a path that includes a conductor that functions as a return conductor when the foam pad is placed between the active electrode and the return electrode and conductor.

5. Claims 57-65, 67, 71-73 and 80 rejected under 35 U.S.C. 102(b) as being anticipated by Brant et al. USPN 3,163,166. Brant et al is considered to have a support member 10 with a round mounting bracket 32 having an apertured portion so as to render it tube-shaped for receiving detachable electrode 62 in a manner such that it is rotatable thereabout and a reservoir with porous portion 42. See pulse generator circuit of figure 2 with battery 68 and electrically

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conductive support portion 12. Electrode is capable of being disposed and the pulser 10 is capable of being held on a table.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-4, 6-17, 19-21, 25, 28-30, 32-43, 45-47, 51-54, 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weaver et al USPN 5,019,034 in view of Ariura et al. USPN 4,474,570. Weaver et al teaches a method of delivering medicaments to the active skin layer with increased efficiency by creating micropores in the outer stratum corneum using pulses from 20 V to 2,000 V. Weaver teaches the application of iontophoresis as well as mechanical acoustical pressures (vibrations) to increase the delivery of the drugs following the electroporation step. Weaver does not mention the specific medicament Vitamin C. Ariura et al teaches the use of Vitamin C delivery by iontophoresis for treating various skin disorders. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to have combined the methods of Weaver et al and Ariura et al to treat skin in need of dermatological treatments as described by Ariura et al with electroporating pulses and vitamin c

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prior to delivery the application of iontophoresis and/or ultrasound so as to increase the efficiency of drug delivery. The various delivery times, pulse widths etc. are routine experimentation so as to optimize delivery conditions.

8. Claims 1-4, 7-17, 19-21, 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sibalis USPN 5,135,478 in view of Ariura et al. USPN 4,474, 570.

Sibalis teaches the use of a pulse generating circuit to cover a multitude of voltages, frequencies and duty cycles. As taught by Sibalis, one may select from this vast storage of current parameters to optimize the delivery of a particular drug. While Sibalis does not teach the specific medicament vitamin C, Ariura et al teaches that it was known to select Vitamin C to treat various dermatological conditions. To have selected Vitamin C as the desired agent to be delivered and then optimized the voltage, frequencies etc. would have been obvious. It is noted that applicant's recited voltages i.e 25 V, 100V etc are not necessarily electroporation voltages since it is the voltage/current density (i.e. V/cm^2) that determines whether electroporation occurs or not. Therefore the recited voltages are obvious to Sibalis and Ariura depending upon the size of the electrode selected.

9. Claims 5, 18, 23-24, 31, 44, 49, 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weaver et al USPN 5,019,034 in view of Ariura et al USPN 4,474,570, each further view of applicant's Background of the Invention. Applicant differs in reciting the L-

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ascorbic acid provided in a cream, a specific derivative, or at a certain pH which neither Ariura et al nor the Weaver et al reference specify. However applicant acknowledges the existence of such dermatologically acceptable compositions in the background of the invention. To have substituted such wrinkle/freckle creams for the aqueous solution of Ariura et al would have been obvious.

10. Claims 5, 18, 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ariura et al. USPN 4,474,570, or alternatively Sibalis USPN 5,135,478 in view of Ariura et al USPN 4,474,570, either in further view of applicant's Background of the Invention . Applicant differs in reciting the L-ascorbic acid provided in a cream, a specific derivative, or at a certain pH which the Ariura et al reference fails to specify. However applicant acknowledges the existence of such dermatologically acceptable compositions in the background of the invention. To have substituted such wrinkle/freckle creams for the aqueous solution of Ariura et al would have been obvious.

11. Claims 22 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weaver et al USPN 5,019,034 in view of Ariura et al USPN 4,474,570, and in further view of Chien et al USPN 5,042,975 or Sibalis et al USPN 5,224,928. While Weaver as modified by Ariura do not specify a pH for the ascorbic acid to be delivered, it is well known in the art to vary the pH of a solution for optimal desired absorption as taught by Chien et al as well as Sibalis et al.

(Column 17 lines 26-41).

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12. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ariura et al USPN 4,474,570 or alternatively, Sibalis USPN 5,135,478 in view of Ariura et al USPN 4,474,570, each in further in view of Chien et al USPN 5,052,975 or Sibalis et al USPN 5,224,928.

Neither Ariura et al nor Sibalis '478 teach ascorbic acid in a pH range of 4.0 to 5.0 however it is considered obvious as evidenced by Chien et al and Sibalis et al for similar reasons as in item 11 above.

13. Claims 25-26 rejected under 35 U.S.C. 103(a) as being unpatentable over Ariura et al USPN 4,474,570 or alternatively Sibalis USPN 5,135,478 in view of Ariura et al USPN 4,474,570, each further in view of one of Lee et al. or Eppstein et al.. The combination of microabrasion devices as well as chemical enhancers would have been obvious inclusions on the Ariura et al or Sibalis as modified by Ariura et al. arrangements since they are well known as evidenced by Lee et al. and Eppstein et al.

14. Claims 26 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weaver et al USPN 5,019,034 in view of Ariura et al USPN 4,474,570 and further in view of either Lee et al USPN 5,250,023 or Eppstein et al. USPN 5,445,611.

As noted in item 13, microabraders and chemical enhancers are routinely included on transdermal delivery devices to lower skin resistance.

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15. Claims 57-58, 62-63, 66 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Sibalís 5,358,483 (alone or further in view of Sibalís USPN 5,135,478. Sibalís in figure 2a shows a support member in the form of a wrist watch that is capable of being hand held and an electrode 12' with an electrically conductive cover (reservoir) that is adhesively attached to the support member. While the reference teaches a DC current source, such can be considered a pulse generator since the user may turn the device on and off to generate at least one pulse. Alternatively, it would have been obvious to include the the automatic pulse generator of Sibalís '478 to optimize drug delivery.

16. Claims 57, 74-75 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Gross et al USPN 5,279,544 (alone or alternatively in view of Sibalís 5,135,478). Gross et al teaches a support member 4 in figure 3 that is capable of being hand held and an electrode (either 36 or 38) is attached to the support member. Injection means needles 26b and pressure applicator help the delivery of molecules. The examiner considers the battery to be a pulse generator since it maybe used to deliver a DC current of desired length (pulse) by applying and removing the device from the body. Alternatively, to have used a pulse generator as in Sibalís '478 to aid delivery of the drug.

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17. Claims 57, 76-77 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Henley USPN 5,658,247 (alone or in view of Sibalis 5,135,478).

Henley shows a support member in figure 2 to which an electrode (see cover figure) may be attached. Vibrational members 11 provide for phonophoresis. The current source is capable of acting as a pulse generator since a time period of any given length may be selected. Alternatively, a pulse generator of the Sibalis type to fine tune drug delivery would have been obvious.

18. Claims 57, 78 and 79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tuttle et al USPN 5,108,363 in view of Sibalis 5,358,483 alone or further in view of Sibalis USPN 5,135,478. Applicant differs from the Sibalis references in reciting a pressure measuring means and a resistance and recorder means. Tuttle teaches the delivery of a medicament that requires a blood pressure detecting as well as skin impedance as input variables. He does not teach the use of a pulser support member capable of being hand held. To have provided the Tuttle device in a small device so that it is capable of being hand held would have been obvious in view of Sibalis '483 and to have provided a pulse generator for enhanced delivery would have been obvious in view of Sibalis '478.

19. Claims 69 -70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hofmann USPN 5,464,386 in view of Ariura et al. USPN 4,474,570.

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Although Hofmann shows finger like meandering electrodes he does not state they are coated on a flexible sheet. Such a coating arrangement is well known in the art as evidenced by Ariura et al. Applicant's claim spacing and thickness of electrodes is well within the level of skill in the art.

Double Patenting

20. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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21. Claims 1-56 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-54 of U.S. Patent No. 6,302,874 . Although the conflicting claims are not identical, they are not patentably distinct from each other because the current pending claims are merely broader versions of the patent claims and the mere deletions of limitations from patented claims is obvious to one of any skill in any art..

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Bockelman whose telephone number is (703) 308-2112. The examiner can normally be reached on Monday through Friday from 9:30 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Angela Sykes, can be reached on (703) 308-5181. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3591.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0858.

MWB

October 19, 2002


MARK BOCKELMAN
PRIMARY EXAMINER